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EXAMINER	
RAPP, CHAD	

ART UNIT	PAPER NUMBER
2125	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/737,301	Applicant(s) DELBRUGGE ET AL.	
	Examiner Chad Rapp	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-26 are presented for examination.

Specification

2. The abstract of the disclosure is objected to because it contains too many words(<150 words). Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 17-20, 24 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, line 2 "said source" should be changed to "a source". There is insufficient antecedent basis for this limitation in the claim.

In claim 24, line 2 "said microelectrical system device sensors" should be changed to " a microelectrical system device sensors". There is insufficient antecedent basis for this limitation in the claim.

In claim 26, line 2 "the group" should be changed to "a group". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakatani et al. in view of Hamel et al.

Sakatani et al. teaches the claimed invention(claim 1) substantially as claimed including a method of monitoring operation of an automated tool comprising:

a. Positioning in close proximity to aid automated tool at least one wireless sensor is taught as wireless sensors attached to movable shafts of processing machines or the like(abstract);

b. Monitoring at least one condition of said automated tool by said sensor is taught as monitoring system used in combination of the wireless sensor(paragraph [0019]);

c. Emitting signals containing sensor information in space to a microprocessor is taught as a communication unit for transmitting by wireless(paragraph [0027]);

d. Processing said sensor information in said microprocessor is taught as a data processing unit for processing data(paragraph [0026]).

Sakatani et al. teaches the above listed details of the independent claim 1, however, Sakatani et al. does not teach: energizing said wireless sensor by inducing current in an electrical conductor through relative movement between said electrical conductor and a magnetic field.

Hamel et al. teaches :

a. Energizing said wireless sensor by inducing current in an electrical conductor through relative movement between said electrical conductor and a magnetic field is taught a s it could be harvested using electromagnetic devices, PZT materials for energy harvesting wireless sensor network. A coil and magnet in relative rotational motion([0043], [0045] and [0049]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance.

As to claim 2, Sakatani et al. teaches in event that the microprocessor determines that said automated tool has departed from desired conditions of operation issuing a responsive signal is taught as the data is judged to exceed the threshold value is added with an alarm signal(paragraph [0196]).

As to claim 3, Hamel et al. teaches effecting said relative movement by movement of a source of said magnetic field with respect to said electrical conductor is taught a s it could be harvested using electromagnetic devices, PZT materials for energy harvesting wireless sensor network. A coil and magnet in relative rotational motion([0043], [0045] and [0049]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance.

As to claim 4, Hamel et al. teaches employing a permanent magnet as said source of said magnetic field is taught as permanent magnet([0043]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al.

because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 5, Hamel et al. teaches employing as said electrical conductor an electrically conductive loop and extending said permanent magnet through said electrically conductive loop is taught as coil and permanent magnet. Coil and magnet in relative rotational motion([0043] and [0049]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 6, Hamel et al. teaches a spring operatively associated with said electrically conductive loop is taught as a leaf spring([0100]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 7, Hamel et al. teaches providing a flexible material on said sensor and effecting said relative movement between said electrical conductor said magnetic field of said flexible sensor is taught as PZT material and flexible piezoelectric fiber([0043] and [0063]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 8, Sakatani et al. teaches employing aid method to monitor a said automatic tool performing an operation on a work piece is taught as accumulating detection data of the wireless sensors of the running conditions of the machinery and equipment(paragraph[0182]).

As to claim 9, Hamel et al. teaches said at least one sensor being micro mechanical system device is taught as microminiaturize, wireless device(paragraph [0012] and paragraph [0015]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. deals with using remote powering which reduces the size of the sensors and also uses micro miniature and wireless devices such as microelectromechanical devices. These things allow the sensors to be embedded into the devices monitored. The provide tiny, accurate and low power sensing.

As to claim 10, Sakatani et al. teaches employing a plurality of said sensors in said method is taught as a plurality of wireless sensors(paragraph [0064]).

As to claim 11, Hamel et al. teaches measuring by said micro mechanical system device at least one motion-related characteristic of said automated tool is taught as the miniature wireless device comprises a piezoelectric accelerometer([paragraph [0090]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. deals with using remote powering which reduces the size of the sensors and also uses micro miniature and wireless devices such as microelectromechanical devices. These things allow the sensors to be embedded into the devices monitored. The provide tiny, accurate and low power sensing.

As to claim 13, Sakatani et al. teaches transmitting said sensor signals to said microprocessor employing an RF carrier is taught as the signal was a radio wave(paragraph [0081).

As to claim 14, Sakatani et al. teaches transmitting said sensor information as digital information is taught as converting analog signal to digital signal([0169]).

7. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakatani et al. in view of Hamel et al. and further in view of Fox et al.

Sakatani et al. and Hamel et al. teach the claimed invention(claim 1) see paragraph 6 above.

As to claim 12, Fox et al. teaches employing as said automated tool a progressive stamping press operating on a metal sheet work piece is taught as a progressive stamping die(abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Fox et al. because Fox et al. is dealing ways to get rid of the cables and on way Fox et al. discloses is to use non-wired systems(wireless) and wireless is what Sakatani et al. discusses.

As to claim 15, Fox et al. teaches employing said method monitor misfeed is taught as delivering a messages of misfeed problem(col. 1 line 48-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Fox et al. because Fox et al. is dealing ways to get rid of the cables and on way Fox et al. discloses is to use non-wired systems(wireless) and wireless is what Sakatani et al. discusses. Misfeed is an important parameter to monitor because it can lead to increase scrap metal.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 16-22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakatani et al. in view of Hamel et al.

Sakatani et al. teaches the claimed invention (claim 16) substantially as claimed including apparatus for monitoring operation of an automated tool comprising:

a. An automated tool is taught as shafts of processing machines or the like(abstract);

b. At least one wireless sensor for monitoring a condition of said automated tool and emitting signals through space is taught as monitoring system used in combination of the wireless sensor and a communication unit for transmitting by wireless(paragraphs[0019] and [0027]);

c. A microprocessor for receiving said sensor signals and determining the departure from a desired characteristic exists and if so emitting a responsive signal is taught as the data is judged to exceed the threshold value is added with an alarm signal(paragraph [0196]).

Sakatani et al. teaches the above listed details of the independent claims 16, however, Sakatani et al. does not teach : said sensor being a wireless sensor having an electrical conductor mounted for relative movement with respect to a magnetic field such that relative movement there between will induce electrical current in said electrical conductor for energizing said sensor.

Hamel et al. teaches :

a.. Said sensor being a wireless sensor having an electrical conductor mounted for relative movement with respect to a magnetic field such that relative movement there between will induce electrical current in said electrical conductor for energizing said sensor is taught a s it could be harvested using electromagnetic devices, PZT materials for energy harvesting wireless sensor network. A coil and magnet in relative rotational motion([0043], [0045] and [0049]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance.

As to claim 17, Hamel et al. teaches said source of magnetic field being a permanent magnet is taught as permanent magnet([0043]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 18, Hamel et al. teaches said electrical conductor being an electrically conductive loop operatively associated with said sensor for energizing the same, and said elongated permanent magnet extending through the opening in said electrically conductive loop is taught as coil and permanent magnet. Coil and magnet in relative rotational motion([0043] and [0049]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need

batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 19, Hamel et al. teaches a spring operatively associated with said permanent magnet to establish relative movement of the same with respect to said electrical conductor responsive to movement of said automated tool is taught as a leaf spring([0100]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 20, Hamel et al. teaches said sensor being composed in part of a flexible material which is structured to create relative movement between said electrical conductor and said permanent magnet responsive to movement of said automated tool is taught as PZT material and flexible piezoelectric fiber([0043] and [0063]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. is dealing with energy harvesting or getting the energy from the environment. This allows the Sakatani et al. to produce smaller sensor because they do not need batteries or as much maintenance. This is just a part of the device to effect the harvesting of energy.

As to claim 21, Hamel et al. teaches said at least one said wireless sensor being a microelectromechanical system device is taught as microminiaturize, wireless device(paragraph [0012] and paragraph [0015]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Hamel et al. because Hamel et al. deals with using remote powering which reduces the size of the sensors and also uses micro miniature and wireless devices such as microelectromechanical devices. These things allow the sensors to be embedded into the devices monitored. The provide tiny, accurate and low power sensing.

As to claim 22, Sakatani et al. teaches said apparatus having a plurality of said sensors is taught as a plurality of wireless sensors(paragraph [0064]).

As to claim 24, Sakatani et al. teaches said mircoelectrical system device sensors being structured to monitor acceleration related conditions is taught as an acceleration sensor(paragraph[0195]).

As to claim 25, Sakatani et al. teaches said microprocessor being structured to issue a responsive signal in the event it determines that said automated tool has departed from desired conditions of operation is taught as the data is judged to exceed the threshold value is added with an alarm signal(paragraph [0196]).

As to claim 26, Sakatani et al. teaches said microprocessor responsive signals being selected from the group consisting of an automated tool shutdown signal, an alarm signal and the data delivery signal is taught as the data is judged to exceed the threshold value is added with an alarm signal(paragraph [0196]).

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakatani et al. in view of Hamel et al. and further in view of Fox et al.

Sakatani et al. and Hamel et al. teach the claimed invention(claim 16) see paragraph 9 above.

As to claim 23, Fox et al. teaches said automated tool being a progressive stamping press for performing operations on a metal sheet work piece is taught as a progressive stamping die(abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Sakatani et al. with the teachings of Fox et al. because Fox et al. is dealing ways to get rid of the cables and on way Fox et al. discloses is to use non-wired systems(wireless) and wireless is what Sakatani et al. discusses.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Rapp whose telephone number is (571)272-3752. The examiner can normally be reached on Mon-Fri 11:00-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571)272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chad Rapp
Examiner
Art Unit 2125

Cjr

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